Understanding Current State of Pumped Storage Benefits and Barriers

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Benefits: Proven

The only PROVEN large storage technology able to support Grid Operations

30 years of operation at Helms Pumped Storage facility – robust licensing and regulatory oversight of safety, environmental, and reliable operations

930 MW pumping to 1,212 MW generating
Of SUSTAINED Energy/Capacity/Ancillary Services

Spin/Load following (240 MW/Min)
Non-Spin (0 to 1,212 MW in less than 10 min
Regulation (AGC)
Inertia: 3 million lbs of rotating equipment

Benefits: New Technology

While pumped storage is tried and true technology, there are additional technology enhancements that make it even more valuable:

Variable Speed Pumping

Ternary Design (pump and turbine on the same shaft)

Both can provide for demand side regulation and even "SMARTER GRID" benefits

Barriers: Uncertainty

Market

Planning and evaluation process:

- **Recognition of Value**

Large-scale:

- **Economies of scale comes with a large commitment**

Development lead time:

- **Robust licensing and regulatory oversight**
- **Appropriate approval path for either Independent or Utility Owned resources**